

IN THE UNITED STATES PATENT AND TRADEMARK OFFICEU.S. Patent No.: **7,422,739 B2**

Group Art Unit: 1644

Serial No.: **09/ 911,703**

Examiner: R. Schwadron

Confirmation No.: 4927

Filed: 25 July 2001

Applicant: Darrell R. ANDERSON et al.

For: Anti-CD20 Antibodies (as amended)

Commissioner for Patents

Attn.: **Certificate of Correction Branch**

P.O. Box 1450

Alexandria, VA 22313-1450

**REQUEST UNDER 37 C.F.R. § 1.322 FOR EXPEDITED CORRECTION OF A PATENT
DUE TO A MISTAKE BY THE OFFICE**

Sir:

Through a mistake on the part of the Office, U.S. Patent No. 7,422,739 B2 was printed with the wrong sequence listing. The invention is claimed with reference to the sequence listing. Accordingly, patentee requests that the Office take corrective action.

Patentee requests that the Office issue a corrected patent as provided by § 1.322(b). In the alternative, patentee requests that the Office issue a Certificate of Correction as indicated in the annexed 23 pages of forms PTO/SB/44.

The error is attributable solely to the Office. Patentee thus requests that the Office expedite the issuance of a corrected patent or Certificate of Correction. M.P.E.P. § 1480.01.

We believe that no fee is due in connection with this request. However, the Director may charge any fee that may be required to consider this paper or grant the requested relief to our Deposit Account 18-1260.

Nature of the mistake

The sequence listing that appears in the printed patent appears to be the original sequence listing filed with the application. This sequence listing differs from the sequence listing of record.

Several versions of the sequence listing were filed during the pendency of this application. Differences reflected in the final sequence listing include the presentation of 11 sequences, instead of 9 as shown in the patent, and a change in one of the sequences corresponding to the correction of a typographical error in one of the figures. The sequence listing of record was filed on 12 August 2005.

The mistake in the printed patent document is material because all of the patent claims refer to sequences in the sequence listing. The sequences in the sequence listing were rearranged in a submission on 24 March 2004, and the revised arrangement was maintained in later submissions. Thus, the SEQ ID NOs: 4 and 6 in the sequence listing of record – the sequences recited in the patent claims – are not the same sequences as the SEQ ID NOs: 4 and 6 shown in the sequence listing printed in the patent.

The correct sequence listing remains in the records of the Office. The supplemental content available on private PAIR includes the sequence listing of record as Version 5.

The mistake occurred through the fault of the Office

The sequence listing that should have been printed in the patent was properly entered in the official record of the application.

Both paper and electronic versions of the sequence listing, together with a statement concerning their identity, were provided with a response to a non-final Office action filed on 12 August 2005. See Attachment 1. The sequence listing complied with all of the requirements of §§ 1.821-1.825. The “paper” version is present in the image file wrapper of the application. STIC personnel reviewed the electronic copy and determined that the sequence listing complied with the Office’s technical and formatting requirements. A paper confirming that the sequence listing had been entered in the Office’s sequence database was entered in the file on 18 August 2005 (PALM code CRFE). See Attachment 2.

The examiner objected to the format of the new sequence listing in a communication mailed on 2 November 2005. *See* Attachment 3. In a decision on petition mailed on 26 July 2006, the Office vacated the objection, finding that the sequence listing filed on 12 August 2005 fully complied with 37 C.F.R. § 1.821 *et seq.* *See* Attachment 4.

The change that prompted the sequence submission on 12 August 2005 was a correction to the sequence shown in Figure 5. *See* Attachment 5. The corrected figure was approved in the Office action mailed on 29 December 2006. *See* Attachment 6.

There is nothing in the record of this application that indicates the sequence listing filed on 12 August 2005 was not entered. Thus, that sequence listing is the one that should have been printed in the patent.

Relief requested

Because of the nature of the mistake, patentee believes it is appropriate for the Office to issue a corrected patent. § 1.322(b). As the mistake is attributable solely to the Office, as shown by the evidence in the Attachments that accompany this paper, patentee requests that the Office expedite the correction. M.P.E.P. § 1480.01.

If the Office determines that it should not issue a complete corrected patent, patentee requests that the Office promptly issue a Certificate of Correction based on the annexed 23 pages of forms PTO/SB/44.

The annexed forms were prepared from the data file used to prepare the electronic copy of the sequence listing on 12 August 2005. The data fields that are not customarily printed in U.S. patents (*i.e.*, fields <110> through <151>, identifying the application) have been removed, and the field headings have been edited to include the English language identifiers used in other patents (*e.g.*, the title "NUMBER OF SEQ ID NOS:" has been added to field <160>). The forms have been paginated so that the identifying information for each SEQ ID NO begins on a new page for the convenience of the reader.

Conclusion

Patentee requests that the Office correct U.S. Patent No. 7,422,739, preferably by republication, 37 C.F.R. § 1.322(b), or alternatively by issuing a Certificate of Correction, § 1.322(a).

Respectfully submitted,

/David L. Fitzgerald/

David L. Fitzgerald, Reg. No. 47,347
Attorney for Biogen Idec Inc.

15 September 2008

SIDLEY AUSTIN LLP
1501 K Street, N.W.
Washington, DC 20005

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fax (202) 736-8711



Serial no. 09/911,703

Attorney Docket no. 27693-01008

SEQUENCE LISTING

<10> Biogen Idec Inc.
Anderson, Darrell R.
Rastetter, William H.
Hanna, Nabil
Leonard, John E.
Newman, Roland
Reff, Mitchell

<120> ANTI-CD20 ANTIBODIES

<130> 27693-01008

<140> 09/911,703

<141> 2001-07-25

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<151> 1993-11-03

<150> US 07/978,891

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<212> DNA

<213> Artificial Sequence

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<223> vector

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SERIAL NO. 09/911,703 - COPY OF SELECTED PAGES FROM IMAGE FILE WRAPPER

- Finally, the undersigned states that he has reviewed information, believed to be correct, indicating that the nucleotide sequence in the deposited clone, ATCC 69119, does in fact encode a Pro residue at position +14 of the heavy chain.

The error in Figure 5 of the application as filed is an "obvious error" that can be properly corrected on the evidence of record. Because the CCT codon always encodes a Pro amino acid residue, the skilled worker would immediately recognize that an error was present. Importantly, the skilled worker would also immediately understand what the correction must be. Also, the evidence in the patent application and in the priority document fully supports correcting the figure to show a Pro residue at position +14 in the amino acid sequence.

Corrected sequence listing

A substitute sequence listing accompanies this reply. The sequence listing is revised to reflect the correction to the amino acid sequence shown in Figure 5 (SEQ ID NO: 6) as discussed immediately above. Except for this correction, the sequences in the new sequence listing are identical to the sequences in the application as filed. For the reasons discussed in connection with the correction of the figure, applicant submits that this amendment adds no new matter.

A computer-readable copy of the attached sequence listing is filed with this reply on compact disc. In compliance with 37 C.F.R. § 1.821(e), the undersigned states that the paper and computer-readable copies of the sequence listing are identical.

Informalities

In response to the examiner's observation at ¶ 3 of the Office action, an information disclosure statement citing WO 94/11026, including a copy of the cited document, accompanies this reply.

The informality regarding the priority claim, as noted by the examiner in the last Office action at ¶ 4, has been rectified by amendment as set forth above.

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.

Application Serial Number: 09/911, 703D
Source: JFW/b
Date Processed by STIC: 08/18/2005

ENTERED

SERIAL NO. 09/ 911,703 - COPY OF SELECTED PAGES FROM IMAGE FILE WRAPPER



UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Address : COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
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EXAMINER

ART UNIT PAPER

200510

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.


Commissioner for Patents

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth below or on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures.

Original SEQ. ID. No. 4 and 7 (now SEQ. ID. No. 9 and 11) were disclosed as antisense in the originally filed sequence listing, but are not disclosed as antisense in the currently filed listing.

Applicant is given ONE MONTH, or THIRTY DAYS, whichever is longer, from the mailing date of this letter within which to comply with the sequence rules, 37 CFR 1.821 - 1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 CFR 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). In no case may an applicant extend the period for reply beyond the SIX MONTH statutory period. Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the reply.

Ron Schwadron, Ph.D.
Primary Examiner
Art Unit 1644


RONALD B. SCHWADRON
PRIMARY EXAMINER
GROUP 1600 1600

SERIAL NO. 09/ 911,703 - COPY OF SELECTED PAGES FROM IMAGE FILE WRAPPER

UNITED STATES PATENT AND TRADEMARK OFFICE

JUL 26 2006

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

DAVID L. FITZGERALD
SIDLEY AUSTIN LLP
1501 K STREET N.W.
WASHINGTON DC 20005

In re Application of
Anderson et al
Serial No. : 09/911,703
Filed : 25 July 2001
Attorney Dkt No. : 27693-01008

Decision on Petition

This decision is in response to the petition under 37 CFR 1.181 filed 28 April 2006, to
request a requirement under 1.182 et al (sequence rules).

BACKGROUND AND DISCUSSION

This application contains nucleic acid and amino acid sequences. Applicants have
submitted a computer readable form of the sequence listing, a paper copy of the sequence
listing and a letter stating that the electronic copy and paper copy of the sequence listings
are identical, in accordance with 37 CFR 1.812, *et seq.*

In addition to meeting the requirements of 37 CFR 1.182 *et seq.*, the examiner has
requested that an indication of antisense orientation be placed in field <223> of the
sequence listing.

This request has been made in error. Applicants are not required to state that the
sequence is antisense in section 223. The only mandatory use of <223> is for the use 'n'
or 'Xaa' in the sequence or use of Artificial or Unknown for the organism. Any other
information the applicant wants to include in a feature is optional.

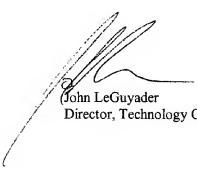
SERIAL NO. 09/911,703 - COPY OF SELECTED PAGES FROM IMAGE FILE WRAPPER

DECISION

The petition to withdraw the restriction requirement is **GRANTED**. The letters mailed on November 2, 2005 and February 29, 2006 are hereby vacated and no response to them is required by applicants.

The application will be forwarded to the examiner to consider the amendment and response filed on 12 August 2005 and to prepare an action which is consistent with this petition decision.

Should there be any questions regarding this decision, please contact Special Program Examiner Julie Burke, by mail addressed to Director, Technology Center 1600, PO BOX 1450, ALEXANDRIA, VA 22313-1450, or by telephone at (571) 272-1600 or by Official Fax at 571-273-8300.



John LeGuyader
Director, Technology Center 1600

The amendments at pages 16 and 26 correct obvious informalities and identify trademarked names.

The amendments add no new matter to the disclosure.

Drawing correction

A substitute sheet for Figure 5 is attached. The correction involves the rectification of a typographical error in the amino acid sequence of the heavy chain variable domain of chimeric antibody C2B8. In particular, the predicted translation is corrected to indicate that the residue at position +14 is Pro, not Ala.

The nucleotide sequence in the figure as filed is correct. The codon corresponding to position +14 (CCT) in fact encodes the amino acid proline (Pro), not alanine (Ala) as shown in the figure. This is evidenced by the attached table showing the amino acids encoded by DNA codons, copied from the textbook by Lodish *et al.*, *Molecular Cell Biology*, available online at the PubMed website at the U.S. National Library of Medicine. (Note that this table lists U instead of T, reflecting the codons employed in RNA sequences.)

The correction is supported by the present application as filed and by the evidence in the priority applications. The following evidence supports the correctness of the nucleotide sequence and the assignment of residue +14 of the heavy chain at Pro instead of Ala.

- First, Figure 3, which provides the complete nucleotide sequence of the TCAE-8 vector, shows the same nucleotide sequence as Figure 5 in the region of interest. A copy of the relevant part of that figure from U.S. Patent No. 5,736,137 with the CCT codon boxed is attached.
- Second, the nucleotide sequence shown in the original sequence listing as SEQ ID NO: 3 (now SEQ ID NO: 5 in this application) is correct. The sequence listing was present in the application as filed.
- Third, the corresponding Fig. 5 from the original application in this series, U.S. application serial no. 07/978,891, shows the same nucleotide sequence and the correct predicted amino acid sequence (*i.e.*, including a Pro residue at position +14). A copy of that figure indicating residue +14 is also attached.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Applicants priority claim lacks the appropriate petition as per specified and required above.

3. The proposed correction to Figure 5 (amendment filed 8/12/05) is approved.

4. Petitions to correct inventorship were filed in parent application 08/149099 and other applications which claimed priority to said application wherein the contribution of the various inventors to various inventions originally claimed in said application was clarified. The inventorship in the instant application must be amended to be congruent with statements made in said petitions.

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Strike the entire sequence listing (col. 31/32, line 40, through col. 53/54, line 42)
and replace it with the following –

SEQUENCE LISTING

```
<160>  NUMBER OF SEQ ID NOS: 11

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<212>  TYPE: DNA
<213>  ORGANISM: Artificial Sequence

<220>  FEATURE:
<223>  OTHER INFORMATION: vector

<400>  SEQUENCE: 1
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MAILING ADDRESS OF SENDER (Please do not use customer number below):

David L. Fitzgerald
Sidley Austin LLP, Attn. DC Patent Docketing
1501 K Street, NW, Washington, DC 20005

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

Page 2 of 23

PATENT NO. : 7,422,739 B2
 APPLICATION NO.: 09/ 911,703
 ISSUE DATE : 9 September 2008
 INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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MAILING ADDRESS OF SENDER (Please do not use customer number below):

David L. Fitzgerald
 Sidley Austin LLP, Attn. DC Patent Docketing
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This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 3 of 23

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APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 4 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

Page 5 of 23

PATENT NO. : 7,422,739 B2
 APPLICATION NO.: 09/ 911,703
 ISSUE DATE : 9 September 2008
 INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

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PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

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PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 10 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 11 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 12 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/11,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 13 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

gtttgcgtat	tgggcgctct	tccgcttct	cgctcactga	ctcgctgcgc	tcggtcgctc	7320
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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 14 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

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APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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<212> TYPE: DNA
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APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 4
<211> LENGTH: 128
<212> TYPE: PRT
<213> ORGANISM: Mus musculus

<400> SEQUENCE: 4

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	20	25	30
Leu Ser Ala	Ser Pro Gly Glu Lys Val	Thr Met Thr Cys Arg Ala Ser	
	35	40	45
Ser Ser Val	Ser Tyr Ile His Trp Phe	Gln Gln Lys Pro Gly Ser Ser	
	50	55	60
Pro Lys Pro	Trp Ile Tyr Ala Thr Ser	Asn Leu Ala Ser Gly Val Pro	
65	70	75	80
Val Arg Phe	Ser Gly Ser Gly Ser Gly	Thr Ser Tyr Ser Leu Thr Ile	
	85	90	95
Ser Arg Val	Glu Ala Glu Asp Ala	Thr Tyr Tyr Cys Gln Gln Trp	
	100	105	110
Thr Ser Asn	Pro Pro Thr Phe Gly	Gly Gly Thr Lys Leu Glu Ile Lys	
	115	120	125

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 17 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
<210> SEQ ID NO 5
<211> LENGTH: 420
<212> TYPE: DNA
<213> ORGANISM: Mus musculus

<400> SEQUENCE: 5
atgggttgga gctcatctt gctcttcctt gtcgctgttg ctacgcgtgt cctgtcccag      60
gtacaactgc agcagcctgg ggctgagctg gtgaagcctg gggcctcagt gaagatgtcc      120
tgcaaggctt ctggctacac atttaccagt tacaatatgc actgggtaaa acagacacct      180
ggtcggggcc tggaatggat tggagctatt tatcccgaa atgggtgatac ttctacaat      240
cagaagtcca aaggcaaggc cacattgact gcagacaaat cctccagcac agcctacatg      300
cagctcagca gctgacatc tgaggactct gcggtctatt actgtgcaag atcgacttac      360
tacggcggtg actggtactt caatgtctgg ggcgcaggga ccacggtcac cgtctctgca      420
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UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

Page 18 of 23

PATENT NO. : 7,422,739 B2
 APPLICATION NO.: 09/ 911,703
 ISSUE DATE : 9 September 2008
 INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 6
 <211> LENGTH: 140
 <212> TYPE: PRT
 <213> ORGANISM: Mus musculus

<400> SEQUENCE: 6

Met	Gly	Trp	Ser	Leu	Ile	Leu	Leu	Phe	Leu	Val	Ala	Val	Ala	Thr	Arg
1			5						10					15	
Val	Leu	Ser	Gln	Val	Gln	Leu	Gln	Gln	Pro	Gly	Ala	Glu	Leu	Val	Lys
			20					25					30		
Pro	Gly	Ala	Ser	Val	Lys	Met	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe
			35				40					45			
Thr	Ser	Tyr	Asn	Met	His	Trp	Val	Lys	Gln	Thr	Pro	Gly	Arg	Gly	Leu
	50					55				60					
Glu	Trp	Ile	Gly	Ala	Ile	Tyr	Pro	Gly	Asn	Gly	Asp	Thr	Ser	Tyr	Asn
	65				70					75				80	
Gln	Lys	Phe	Lys	Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser
			85						90					95	
Thr	Ala	Tyr	Met	Gln	Leu	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Ser	Ala	Val
			100					105					110		
Tyr	Tyr	Cys	Ala	Arg	Ser	Thr	Tyr	Tyr	Gly	Gly	Asp	Trp	Tyr	Phe	Asn
			115				120					125			
Val	Trp	Gly	Ala	Gly	Thr	Thr	Val	Thr	Val	Ser	Ala				
	130					135					140				

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CERTIFICATE OF CORRECTION

Page 19 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 7
<211> LENGTH: 27
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: impaired Kozak sequence and restriction enzyme site

<400> SEQUENCE: 7
ggggagcttg atcgatcctc tatggtt

27

MAILING ADDRESS OF SENDER (Please do not use customer number below):

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 20 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 8
<211> LENGTH: 47
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: PCR Primer

<400> SEQUENCE: 8
atcacagatc tctcaccatg gattttcagg tgcagattat cagcttc

47

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

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PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 9
<211> LENGTH: 30
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: PCR Primer

<400> SEQUENCE: 9
tgcgacatcc gtacgtttga tttccagctt

30

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CERTIFICATE OF CORRECTION

Page 22 of 23

PATENT NO. : 7,422,739 B2
APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 10
<211> LENGTH: 27
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: PCR Primer

<400> SEQUENCE: 10
gcggtcccca cgcgtgtcct gtccacg

27

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Page 23 of 23

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APPLICATION NO.: 09/ 911,703
ISSUE DATE : 9 September 2008
INVENTOR(S) : D.R. ANDERSON et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 11
<211> LENGTH: 29
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: PCR Primer

<220> FEATURE:
<221> misc_feature
<222> LOCATION: (1)..(29)
<223> OTHER INFORMATION: s is g or c

<220> FEATURE:
<221> misc_feature
<222> LOCATION: (1)..(29)
<223> OTHER INFORMATION: m is a or c

<220> FEATURE:
<221> misc_feature
<222> LOCATION: (1)..(29)
<223> OTHER INFORMATION: r is g or a

<400> SEQUENCE: 11
ggstgttgtagctgtagctgmrg agacrgtga

29

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